ABSTRACT OF THE DISCLOSURE

[66] The invention relates to the acquisition of spectra of biopolymers, especially of proteins, in tandem mass spectrometers with ionization using matrix-assisted laser desorption (MALDI) for the examination or determination of sequence patterns. The invention consists of a method of measuring granddaughter spectra of terminal fragment ions of the bipolymers in tandem mass spectrometers, wherein a so-called in-source fragmentation to generate a first generation of fragment or daughter ions of a biopolymer is coupled with a subsequent measurement of granddaughter ions, which have been obtained by a further fragmentation of a selected type of daughter ions. The method according to the invention enables the determination of the terminal sequences which are otherwise very difficult to measure.